REMARKS/ARGUMENTS

I. Introduction:

Claims 1, 4, 6, 9, 11, 13, 19, 22, 24, 26, 27 28, and 30 are amended, claims 3, 5, 10, 12, 15, 16, 20, 25, 29, and 31 are canceled, and claims 32-35 are added herein. With entry of this amendment, claims 1, 2, 4, 6-9, 11, 13-14, 17-19, 21-24, 26-28, 30, and 32-35 will be pending.

There were two claims numbered 11 in the originally filed patent application. The second "Claim 11" has been canceled.

II. Drawings:

Corrected drawing sheets are submitted herewith as requested by the Examiner.

III. Claim Rejections under 35 U.S.C 103:

Claims 1-32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,757,255 (Aoki et al.) in view of U.S. Patent No. 6,687,223 (Sajadieh et al.).

Claim 1 is directed to a method of estimating periodic worst-case delay for a traffic aggregate having an associated rate. The method generally comprises collecting traffic data at a queue associated with the traffic aggregate over a time interval, calculating a traffic profile responsive to the collected traffic data and the associated rate, and calculating a periodic worst-case delay for the traffic profile. Claim 1 has been amended to include calculating a burst parameter for the collected traffic and specify that the traffic profile is a burst-rate profile.

Aoki et al. disclose an apparatus for measuring communication performance. The apparatus is a communications performance measuring device configured for obtaining an effective bandwidth representing performance in TCP communications. The measuring device includes a packet monitoring unit, a performance index detecting unit, a session management unit, a session management table, and a performance calculating unit. The apparatus measures the performance in the TCP communications on a communications route of a network without transmitting a multiplicity of measurement oriented packets to the network. An average value of round trip times is obtained based on a small number of measurement-oriented packets at an interval of fixed time, a maximum segment size obtained based on a packet size of the packets transmitted and received, and a maximum congestion window size estimated from a time change in the round trip time, are used as performance indexes.

The Sajadieh et al. patent is directed to a delay-locked admission control scheme in communication networks. Sajadieh et al. are concerned with providing a more efficient technique to improve the inconsistency and variability in service delays in a switching network. The delay in a network switch is maintained at a desired level using feedback parameters relating to an estimated current amount of delay in the network switch. Only an adaptable number of new data signals are allowed to enter the network switch during any particular time interval, to guarantee a desired delay performance. The control mechanism may be activated only when a maximum observed delay is greater than a pre-defined threshold.

Neither Aoki et al. nor Sajadieh et al., show or suggest calculating a burst parameter, calculating a burst-rate traffic profile, or calculating a periodic worst-case delay for the traffic profile. Aoki et al. obtain performance indexes of a round trip based on packets transmitted and received. Aoki et al. do not calculate a burst parameter or a burst-rate traffic profile. Sajadieh et al. maintain delay at a network switch at a desired level using feedback parameters. One of the parameters that the control mechanism may use is a maximum observed delay. However, the maximum observed delay is

merely an observed metric. There is no teaching of calculating a periodic worst-case delay for a calculated traffic profile.

The examiner refers to col. 6, line 60 – col. 7, line 10 and col. 18, lines 1-20 of the Aoki et al. patent as disclosing calculation of a burst parameter. The first section referred to simply discusses various performance index values which are collected from log information for a session. The second section discusses determining whether the speed of a measurement-oriented packet exceeds the available bandwidth of a route in UDP. There is no discussion of calculating a burst parameter for collected traffic.

Furthermore, Applicant respectfully submits that there is no suggestion to combine the teachings of Aoki et al. with Sajadieh et al. to produce the claimed invention. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. The Sajadieh et al. patent is directed to providing an efficient technique to improve the inconsistency and variability in service delays in a switching network. Sajadieh et al. use a query delay measurement model which measures a delay be determining a difference between time stamps associated with particular message streams. Sajadieh et al. do not need to measure round trip times as is required by the system of Aoki et al. Aoki et al. are concerned with measuring communication performance, and more specifically, to measuring performance in TCP communications without transmitting special packets such as measurement-oriented packets, which apply an overload onto a network. The only mention of delay in Aoki is with respect to determining available bandwidth (see, e.g., col. 17, lines 4-6). Aoki et al. use ping to measure a time until an echo request packet is received and round trip time (which accounts for any transmission delay). Since Aoki et al. only need to measure round trip time, there is no need to measure network delays or determine a worst case delay.

Accordingly, claim 1, as amended, is submitted as patentable over Aoki et al. and Sajadieh et al.

Claims 2-4, 6-8, and 32-35, depending either directly or indirectly therefrom, are submitted as patentable for the same reasons as claim 1.

Claim 4 is further submitted as patentable because Aoki et al. do not show or suggest an associated rate used to calculate a burst-rate traffic profile that is a negotiated rate agreed to by a customer sending the traffic data.

Claim 6 is further submitted as patentable over Aoki et al. and Sajadieh et al., which do not show or suggest calculating a periodic worst-case delay by dividing a burst parameter by an allocated bandwidth associated with a queue. In rejecting claim 6, the Examiner refers to col. 17, lines 4-40, 54-68 and col. 18, lines 1-20 of the Aoki et al. patent . Col. 17 describes a method for calculating available bandwidth. For example, lines 31-35 describe when a transfer speed P of a measurement oriented packet exceeds an upper limit of available bandwidth of a route, the available bandwidth can be presumed to be less than the transfer speed (E/δ). Col. 18 discusses judging whether or not the speed of the measurement-oriented packet exceeds available bandwidth of a route by checking whether or not the round trip times of the measurement-oriented packet has a certain relationship to the round trip times of other measurement-oriented packets. There is no discussion in Aoki et al. of calculating a worst-case delay by dividing a burst parameter by an allocated bandwidth associated with a queue. As noted above, Aoki et al. do not even address calculating a burst parameter, as required by claim 6. Furthermore, Aoki et al. are concerned with available bandwidth of a route rather than bandwidth associated with a specific queue.

Claim 9 is directed to a method of estimating worst-case queuing delay along a path and has been amended to include collecting a rate parameter and a burst parameter. As previously discussed, neither Aoki et al. nor Sajadieh et al. show or suggest collecting rate and burst parameters or calculating a periodic worst-case delay associated with the rate and burst parameters. Moreover, these references also do not teach adding up a periodic worst-case delay associated with routers along a path, as required by claim 9.

Accordingly, claim 9 is submitted as nonobvious over the prior art of record.

Claim 11 has been amended to including calculating a burst parameter and a burst-rate traffic profile, claims 13 and 26 have been amended to include code that causes a processor to calculate a burst parameter and code that causes the processor to calculate a burst-rate traffic profile, and claim 22 has been amended to include means for calculating a burst parameter for the collected traffic and means for calculating a burst-rate traffic profile. Claims 11, 13, 22, and 26 are submitted as patentable for the reasons discussed above with respect to claim 1. Claim 14, depending from claim 13, claim 23, depending from claim 22, and claim 26, depending from claim 25, are submitted as patentable for the same reasons as claims 13, 22, and 25 respectively.

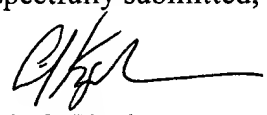
Claims 19 and 28 have been amended to include code that causes the processor to receive burst and rate traffic parameters. Claim 24 has been amended to include means for periodically collecting rate and burst traffic parameters. Claim 30 has been amended to specify that the periodic worst-case delay is based on a burst parameter and a rate parameter. Claims 19, 24, 28, and 30 are submitted as patentable for the reasons previously discussed with respect to claim 9. Claim 21, depending from claim 19, is submitted as patentable for the same reasons as claim 19.

IV. Conclusion:

For the foregoing reasons, Applicant believes that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a

telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 446-8695.

Respectfully submitted,



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Amendments to the Drawings:

The attached sheets of drawings include corrected drawings. These sheets, which include Figs. 1A, 1B, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11 replace the original sheets.

Attachment: Drawings Sheets 1-12